Name _____ Class _____ Date _____

2-2 Think About a Plan

Conditional Statements

Error Analysis Natalie claims that a given conditional and its contrapositive are both true. Sean claims that the given conditional is true but its contrapositive is false. Who is correct and how do you know?

Understanding the Problem

1. What is the main point of disagreement between Natalie and Sean?

_____

_____

2. Do you think it is possible to write a conditional statement that is true, but has a false contrapositive? Explain.

_____

3. How could you use examples of true and false conditionals to decide who is correct?

_____

_____

_____

Planning the Solution

4. Use a table to test some conditional statements. Write several conditional statements and their contrapositives. Use the table to show their truth values. One example has been completed for you. Use additional paper if necessary.

Conditional	True or false?	Contrapositive	True or false?
If a dog has spots, then the dog can fly.	false	If a dog cannot fly, then the dog does not have spots.	false

Getting an Answer

5. What does the pattern in your table tell you about whether Natalie or Sean is probably correct?

_____

_____

Name _____ Class _____ Date _____

2-2 Practice

Form G

Conditional Statements

Identify the hypothesis and conclusion of each conditional.

1. If a number is divisible by 2, then the number is even.

2. If the sidewalks are wet, then it has been raining.

3. The dog will bark if a stranger walks by the house.

4. If a triangle has three congruent angles, then the triangle is equilateral.

Write each sentence as a conditional.

5. A regular pentagon has exactly five congruent sides.

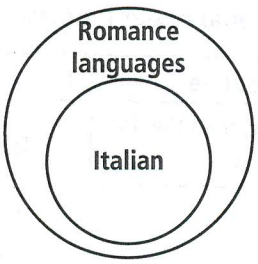
6. All uranium is radioactive.

7. Two complementary angles form a right angle.

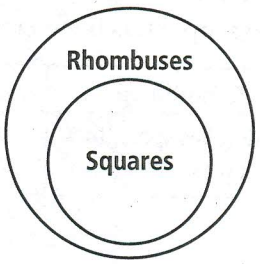
8. A catfish is a fish that has no scales.

Write a conditional statement that each Venn diagram illustrates.

9.



10.



Determine if the conditional is *true* or *false*. If it is false, find a counterexample.

11. If the figure has four congruent angles, then the figure is a square.

12. If an animal barks, then it is a seal.